

Educational (1895) Department.

ORDINARY MS.

G.O., No. 939

Dated 19th Dec. 1895.

INDEXED.

[Despatch Abstract.]

WATER LIFTS.

Communicating to the Director of Public Instruction Proceedings,
Revenue Department, passing orders on Board's Proceedings submitting the
report of a committee appointed to try certain --

BACK PAPERS.

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No. 768, REVENUE, 27TH NOVEMBER 1895.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following memorandum from the Board of Revenue (Revenue Settlement, Land Records and Agriculture), No. 26, dated 23rd August 1895 :—

The Board begs to submit herewith the report of the Committee appointed under G.O., Mis. No. 725, Revenue Department, dated 16th February 1895, to report upon certain water-lifts.

(Signed) P RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department,
with enclosures (five copies of each of the reports).

ENCLOSURE

REPORT ON TRIAL OF WATER-LIFTS.

With reference to G.O., Mis. No. 725, dated 16th February 1895, the Committee thereby appointed begs to submit the following report.

2. The instructions to the Committee were to report, after trial, on the relative merits of the three water-lifts noted on the margin. From the correspondence recorded in Board's Proceedings, Mis. Nos. 1178, 1398, 1788 and 249, of 1895, Government will have learnt that Messrs. Sultan and Co. were not prepared to submit to the Committee for trial the "Sultan" water-lift patented by Sultan Mohidin Sahib, and the Committee accordingly did not test that lift. Mr. Stoney's water-lift was not ready for experiment at Saidapet until the middle of July, and on that date the see-saw lift, with M.R.Ry. Subba Rao voluntarily undertook to erect there at his own cost, was still unfinished. To avoid further delay the Committee therefore proceeded to experiment on one of M.R.Ry. Subba Rao's lifts that had been erected at the Luz. Shortly before the actual trials took place, M.R.Ry. C. K. Subba Rao constructed an improved single mhoote lift which he has devised and this was also tested.

3. The Committee submits a report (with drawings of the lifts) prepared by Mr. A. Chatterton, which is so complete that it leaves little room for further remark.

4. The essential novelty of Mr. Stoney's lift lies in the automatic tilting iron bucket. The trials showed that this bucket works very efficiently. It is as suitable for use with the ordinary country lift as with a whim, and, as there is none of the leakage which is inevitable with buckets made of leather, or fitted with valves, its superiority over leather or valve buckets becomes greater as the depth of the well increases. The lift taken as a whole also gave good results on trial, and might have been worked with much smaller bullock.

5. M.R.Ry. Subba Rao's see-saw lift can be used with any bucket. The iron bucket with a leather discharging trunk used during the experiment was not in good order. This lift also gave remarkably good results, but, as pointed out by Mr. Chatterton, the design cannot as yet be regarded as having reached its limit of perfectibility. Its merits are described in Mr. Chatterton's note, and mainly lie in utilising the force exerted by the bullock and driver in ascending an inclined plane. It is in its essence a cotta in which one bullock, by its mere weight, does the work of several men. As the height of the oscillating platform must be limited by considerations of weight and cost, the design is not adapted for wells in which the water is more than 30 feet below the ground level.

6. Regarding both the above lifts, the Committee is of opinion that whilst they are much more efficient than the single mhoote, and whilst they, in common with the double mhoote, cause much less wear and tear on the bullocks employed it would require more skill to erect and keep them in working order than is usually available in up-country villages, and that to enable

the village blacksmiths to do this work, their training would have to be improved. As to the cost of the lifts it is not possible to give any definite information; but the Committee consider that either might be put up for about Rs. 150, though the charges for Subba Rao's lift would vary greatly according to the materials locally available. Where palm-yrabs are plentiful and cheap it might be possible to design and erect a see-saw platform at a cost well within the means of the ordinary ryot. It must be remembered that the ordinary single mhoote, as used in Southern India, does not cost more than about Rs. 20.

7. As regards M.R.Ry. Subba Rao's new lift, wherein the action is the same as in the single mhoote, except that the weight of the bucket is counterbalanced, and the bullocks are enabled to reverse at the end of the incline and walk up the slope, the Committee is of opinion that, where cattle labour is scarce, the contrivance should prove most valuable, being well within the means of the ryot, and within the capacity of the village artisans to erect. The Committee considers that Mr. Subba Rao is deserving of great commendation for the ingenuity and perseverance displayed in his efforts to devise an improved water-lift, and deems it a matter for regret that he is under the disadvantage of not having been trained as a mechanical engineer.

8. The Committee recommends that M. Chatterton's report be published in the form of a bulletin, together with the drawings submitted therewith. These can be easily and cheaply reproduced by the Survey Department. The data embodied in the report should prove of value to persons interested in the design of improved water-lifts.

9. In conclusion, the Committee begs to report that since the issue of the orders under which it has acted, a considerable amount of public interest has been evinced in the subject of water-lifts generally, and enquiries have been received from divers persons anxious that their inventions should be tested. The Committee would suggest for the consideration of Government whether it would not be advisable to offer a handsome reward, say Rs. 1,000, for a really efficient lift suitable to the needs of the average ryot. A similar but much smaller reward was fruitlessly offered once before (*vide* correspondence ending with G.O., No. 2263, dated 10th April 1890), but progress has since been made, and the offer of a substantial reward will direct attention to the subject and may lead to valuable results. The main conditions of the competition might be—

- (1) That it should be restricted to lifts adapted to raising water 20 feet or more and which can be sold at a price not exceeding Rs. 150 each.
- (2) That intending competitors should submit working drawings of the essential parts of their machines before a date to be fixed, with an approximate estimate of the price, or cost of construction.
- (3) That the plans should be scrutinized by a Committee which would select for trial such of the designs as might appear to possess sufficient merit.
- (4) That each inventor of a selected design should then, within a fixed date, put up his lift in working order, at some place in the neighbourhood of Madras.
- (5) That he should then be entitled to receive from Government the price of the machine as per estimate submitted to the Committee.
- (6) That the competing machines should then be subjected to experiment; and that the best in respect of novelty, cheapness, simplicity, efficiency, durability, adaptability for being worked with different sorts of animal power and at different depths, and the ease with which it can be repaired, should receive the prize.

The Committee deems it unnecessary to enter into further detail unless and until Government approves the suggestion.

MADRAS,
22nd August 1895.

Signed) H. M. WINTERBOTHAM.
") C. BENSON, M.R.A.C.
") A. CHATTERTON, B.Sc.

ORDER—No. 768, Revenue, dated 27th November 1895.

Miscellaneous.

The Government has perused with interest the report of the Committee and approves the proposal to publish the subsidiary report prepared by Mr. Chatterton in the form of a bulletin, together with the accompanying drawings.

2. The Government is disposed to agree with the Committee in considering that it would be advisable to offer a handsome reward for the invention of a really efficient lift suitable to the needs of the average ryot. Previous experience in England shows that great mechanical improvements in agricultural implements have frequently resulted from the competition called for by the offer of special prizes by agricultural

societies and other wealthy public bodies. Conditions are however different in India where similar bodies are practically non-existent and their place in such matters must consequently be taken by Government. The Committee's proposal is however not one of merely local interest but affects the whole of India and the Supreme Government will accordingly be requested to consider whether it would not be possible to promote a competition throughout the country by the offer of substantial prizes towards the cost of which contributions from the several Local Governments and Administrations would no doubt be forthcoming.

3. The attention of Government has in this connection been drawn to the general subject of agricultural shows and exhibitions. In paragraph 21 of G.O., No. 515, dated 4th July 1890, it was decided to confine expenditure upon these objects to the case of cattle and pony shows, but the Government is disposed to doubt whether this decision should be adhered to. According to the system in vogue prior to 1890, only two agricultural exhibitions were held every year for the whole Presidency and the benefits derived therefrom were confined to comparatively small areas. As it appears to Government, what is required is rather the institution of exhibitions on a minor scale to be held in each district at much more frequent intervals, say every two or three years. The management of such exhibitions should be under the general supervision of the Director of Agriculture, the details being as far as possible left in the hands of a local committee, and the expenses being defrayed by means of local subscriptions supplemented by a small grant-in-aid from Government of, say, Rs. 500 per district. The offer at such exhibitions of prizes for the best agricultural stock, produce and implements, would excite considerable local interest and their institution might ultimately be productive of real good. Striking results could hardly be expected in the first few years.

The question raised is one of considerable importance and the Government desires that it should be discussed at the meetings of the Committee which has been appointed in G.O., No. 699, dated 23rd October 1895, to confer with Sir Edward, Buck on the general subject of agricultural education and experiment.

(True Extract.)

Secretary to Government.

To the Board of Revenue (Revenue Settlement, &c).
" F. A. Nicholson, Esq., I.C.S.
" the Acting Principal, College of Agriculture.
Copy to the Educational Department.
" " Public Works Department.

Ed. C. M. Brisson.

60 Copies.

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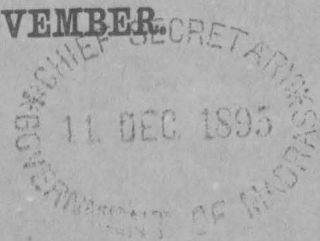
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Encl.

G.O., No. 768, 27th November 1895.

NOVEMBER.



Water-lifts.

Passing orders on Board's Proceedings submitting the report of the Committee, appointed under G.O., No. 725, dated 16th February 1895, on their trial of certain —.

To

The S.P. Secy - Despatch 21/12

Order No. 939d/19 Dec 95

Communicated to the

D.P.I. with advice to G.O. No. 554
Ed. on 1st Nov. 1895.

18.12.95

7/12
13/12

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ORDER OF GOVERNMENT

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STATEMENT WITH DITTO.

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